

IAQ Management Plan

[School District's Name]

Date

1. MISSION STATEMENT

The health, comfort, and learning environment of students and staff are important aspects of [school district's name's] mission. Working with EPA and their IAQ T/S Program, we developed an IAQ Management Plan that will help monitor and improve the quality of air in school buildings. The objectives of this IAQ Management Plan are:

- Reduce the levels of indoor air pollutants through preventive measures such as routine maintenance activities, periodic building evaluations and inspections, and IAQ-specific policies.
- Provide and maintain adequate airflow by repairing and maintaining ventilation equipment, which will promote a comfortable and healthy learning and working environment.
- Respond to IAQ-related concerns and problems in a prompt and thorough manner, and effectively communicate the progress of investigations and their resolution to all interested parties.

2. ROLE OF THE IAQ COORDINATOR AND IAQ TEAM

IAQ Coordinator

[School district's name] has identified [name of person] as the IAQ Coordinator for the district. The school administration and school board is committed to providing the necessary support to meet the school district's IAQ Management Plan objectives.

The IAQ Coordinator's responsibilities include:

- Acting as the key contact person within the district to respond to and address IAQ issues and concerns.
- Coordinating the development and management of the district's IAQ Management Plan. This includes establishing and overseeing an IAQ Team, coordinating building walkthrough inspections, coordinating the building system evaluations, coordinating the investigations of reported IAQ issues and concerns, and modifying the IAQ Management Plan to fit the district's specific needs and objectives.
- Responding to IAQ concerns and issues that are discussed or reported.
- Coordinating the IAQ Team's activities and meetings, including distribution of the IAQ checklists.
- Communicating with staff, parents, and other parties regarding the progress made with the Plan and the process of reporting IAQ concerns.
- Coordinating the annual review of the Plan, which involves building walkthrough inspections, building systems evaluations, and revising the Plan to include new information.
- Obtaining school board approval of the IAQ Management Plan after every major revision.

IAQ Team

[School district's name] has established an IAQ Team to represent [staff, students, and parents]. The IAQ Team assists the school district administration by reviewing IAQ-related information and recommending IAQ policies to maintain and improve the air quality within district facilities and school buildings.

Led by the IAQ Coordinator, the IAQ Team is involved in the following efforts.

- Supporting the IAQ Coordinator to ensure good IAQ in all facilities and areas.
- Contributing to the IAQ Management Plan creation and implementation. The members distribute the IAQ checklists and the *IAQ Backgrounder* to the appropriate staff members.
- Meeting regularly [monthly, quarterly, biannually, or another time-frame] to review and resolve IAQ issues.
- Meeting [annually or as needed, indicate frequency] to review the IAQ Management Plan, which includes the completion of walkthrough inspections of school buildings, key building systems evaluations, and the review of existing policies in the IAQ Management Plan.
- Meeting to evaluate and respond to IAQ concerns that have been reported to the district. The Team takes steps or recommends measures to resolve the reported concern.
- Maintaining IAQ Team meeting minutes, reports, and other documents in the IAQ Management Plan.

The following individuals are members of the IAQ Team:

<u>Name</u>	<u>Position</u>	<u>Contact Information</u>	<u>Specific Duties</u>
Joe Doe	Teacher	Room 10A	Coordinate checklist distribution and
Jane Doe	Facilities Manager	123-4567	Conduct facility walkthroughs that ventilation operating
Donna Doe	School Nurse	Health Office,	Track health symptoms a school

3. BACKGROUND AND IAQ FINDINGS

Indoor air quality (IAQ) is a critical component of providing a healthy and comfortable learning environment. Indoor air pollutants may cause or contribute to short- and long-term health problems including asthma, respiratory tract infection and disease, allergic reactions, headaches, nasal congestion, eye and skin irritations, coughing, sneezing, fatigue, dizziness, and nausea. In addition, indoor air pollutants and extremes in temperature and humidity may cause discomfort, which can affect students' ability to concentrate and learn.

IAQ problems can hasten building deterioration, contribute to the closing of schools, create liability problems, and strain relationships among parents, teachers, school staff, unions, and the school administration.

[IAQ Team, IAQ Coordinator, or consultant's name] researches IAQ issues affecting the school. For example, schools' histories related to radon, pests, lead, and other IAQ issues are investigated and documented.

During the walkthrough inspections and building systems evaluations, [IAQ Team, IAQ Coordinator, or consultant's name] identifies IAQ and problems and issues. The issues are prioritized from most important to least important. Urgent or simple issues are addressed first and issues that require continual attention are scheduled appropriately.

Problems are reported to the IAQ Coordinator, who documents all IAQ concerns, performs an initial investigation, and documents and communicates the resolution to all interested parties. Many issues are resolved using in-house staff. However, professionals, experts, and other outside personnel may be brought in to deal with specific issues. The district administration expects to complete the necessary maintenance, renovations, and construction by [date].

The IAQ Coordinator [or Team] uses [a variety of tools, such as the Problem Solving Wheel, Problem Solving Checklist, and Sections 4-6 of the **IAQ Reference Guide**] to help identify IAQ problems. If the problem cannot be identified or persists despite the district's efforts to identify and remediate it, the IAQ Coordinator discusses the matter with the appropriate school official(s) in order to determine whether a contracted service provider is needed.

When a problem has been identified, the IAQ Coordinator coordinates a response, communicates with the relevant parties, documents actions taken, and keeps copies of all documents. When the problem is not urgent but requires a policy change, the IAQ Coordinator organizes a meeting with the [IAQ Team or a committee] to develop and recommend specific policy changes. These policy changes are presented to the appropriate school officials for review and adoption. All new or revised policies are added to the existing IAQ Management Plan. All interested parties are informed about the measures taken to resolve the problem and all policy changes.

4. IAQ POLICIES AND PLANS

[See Appendix B for more detailed information on developing IAQ policies.]

Animals in the Classroom Policy

While many teachers and students have classroom pets, animals can be a source of allergens, asthma triggers, and microorganisms that may cause infectious diseases. Therefore, [school district's name] has instituted an animal policy based on information gathered from walkthrough inspections, building systems evaluations, IAQ concern reports, and staff meetings.

Animals should be isolated to the extent possible and should be kept away from carpets, upholstered furniture, and stuffed toys. Specific types of animals may be restricted from the classroom if a concern is expressed by staff, students, or parents. The district also reserves the right to ban certain animals if they pose a threat to the safety or comfort of staff and students. Classroom pets should be placed away from return air ducts and from students with known allergy or asthma problems.

Food in the Classroom Policy

Food should not be left in classrooms. When it is necessary to store food in classrooms, it must be kept in airtight, sealed containers to minimize the potential for pests, odors, and biological growth.

Painting Policy

Schools must use latex, water-based paints; using paints that contain mercury or lead is prohibited. Painting and drying should only occur when the area of the building is unoccupied and properly ventilated. It is also important to inform all affected staff and students before a painting job begins. The school district's Hazardous Materials Policy is located in [location].

Hazardous Materials Policy

It is important to handle hazardous materials according to the manufacturers' guidelines. Wastes generated from hazardous materials should be stored separately from regular waste and disposed in appropriate containers. Hazardous materials are common in art, science, and vocational/industrial classes. Training sessions for staff can help explain the risks associated with hazardous materials and the importance of complying with this policy. The school district's Hazardous Materials Policy is located in [location].

Asbestos Hazard Emergency Response Act (AHERA) Management Plan

An AHERA Management Plan is required by Federal law and is intended to prevent staff exposure to asbestos during general operation and maintenance activities. It describes the location and condition of asbestos-containing building materials, and documents their removal and repairs. The AHERA Management Plan also describes the proper recordkeeping practices that school officials must follow. Schools must update their AHERA Management Plans with information collected from their periodic surveillance every 6 months, re-inspection of buildings for asbestos-containing materials every 3 years, and response actions taken within the school. The AHERA Management Plan is located in [location].

Integrated Pest Management Program

Integrated Pest Management (IPM) is a comprehensive strategy for controlling pests, pest-generated substances (such as cockroach fecal matter), and pesticides, which can act as irritants and trigger allergies and asthma. The district's IPM program aims to reduce the frequency and magnitude of both pesticide use and pest problems. The school district's IPM file is located in [location].

Lead Policy

Lead can adversely affect the nervous system. Young children are particularly susceptible. If lead is present in existing school building paint coatings, renovation procedures must be employed that minimize the exposure of building occupants to airborne lead-based paint particles. In addition, a "Lead in Water Plan" has been implemented that includes water sampling, faucet replacement, education, and record keeping. The Lead in Water Plan is located in [location].

Radon Gas Policy

Radon is a naturally-occurring gas that can enter into school buildings from the underlying soils, and build-up to levels that increase occupants' risk for developing lung cancer. Radon testing and mitigation has been performed in [locations]. Radon levels were found to be at [level in picocuries per liter (pCi/L)]. All radon levels that exceeded [level, usually 4 pCi/L] have been reduced to levels comparable to the outside air. Information on radon testing and mitigation is located in [location].

Non-Smoking Policy

[Law or school district's name] prohibits tobacco use in all public school facilities and vehicles. Information about smoking regulations is located in [location].

Anti-Idling Policy

Delivery and bus pickup and drop off zones have been located away from building outdoor air intakes to ensure that exhaust fumes do not enter the facility. [School district's name] prohibits buses and cars from idling while waiting to pick up or drop off students. Buses shall idle no longer than the time required to bring engines to proper operating temperature and to defrost all windows. This policy is not in effect when temperatures fall below 32 degrees Fahrenheit. The school district's anti-idling policy is located in [location].

5. PROCEDURES

Cleaning and Chemicals

Regular and thorough cleaning is an important means for the removal of air pollutant sources. However, the use of cleaning products may also contribute to indoor air pollution. To ensure that cleaning practices remove pollutant sources while using cleaning products appropriately, guidelines have been created.

- Custodial staff shall only use cleaning agents approved by the district for school use. All products must be clearly labeled and stored in a secure area. Bottles of cleaning agents must be tightly closed when stored.
- All material safety data sheets should be stored in an area available to all staff, and the location of this information is discussed in the district's "Employee Right to Know" annual training.
- Rooms must be kept clean. Slightly damp cloths are used to remove dust from surfaces—however, wiped surfaces should not be left damp or wet for extended periods of time, since this can cause mold growth.
- Ammonia-based cleaning agents and chlorine-containing cleaners (such as bleach) must never be mixed because this generates toxic gases.
- During routine operations, pollutant-releasing activities are restricted by time of day, week, or year. For example, the waxing of floors will be performed [on Friday afternoons or vacations, to ensure that gases are removed by the time classes resume].

- Areas of frequent use should be cleaned more often than areas of infrequent use.
- Large walk-off mats must be used to trap dirt and moisture at building entrances. These mats are cleaned according to manufacturers' guidelines to ensure optimal performance. Trapping dirt and moisture at building entrances helps to maintain the cleanliness of floors and carpets throughout the building.
- Staff are not permitted to bring any cleaning products, pesticides, air fresheners, or other chemicals into the school.

Flooring

The two most common types of floor covering for general use in schools are carpet and resilient floor covering products. Carpet offers acoustical and comfort benefits that are generally not available with other floor coverings. Many schools prefer to use carpet in classrooms and administrative areas. Resilient flooring is used for high traffic areas including classrooms, hallways, cafeterias, art rooms, restrooms, and anywhere liquid spills are likely.

While there is considerable debate about the most appropriate flooring material for use in schools, EPA recognizes that there are advantages and disadvantages associated with all types of floors coverings. Regardless of the floor covering type, regular and effective cleaning and maintenance is essential to keep it dry and clean. All carpets must be cleaned with hot water extraction at least twice a year. Carpet may not be cleaned during summer months unless it can be dried within 24 hours.

Preventive Maintenance and Operations

Preventive maintenance involves routine inspection, adjustment, and repair of building structures and systems, including the heating, ventilating, and air conditioning system (HVAC); unit ventilators; local exhaust; fresh air intakes; and flooring. Preventive maintenance plays a major role in maintaining the quality of air by assuring that the building systems are operating effectively and efficiently. Moreover, it helps to maintain comfortable temperatures and humidity in occupied spaces.

The preventive maintenance schedule for [school district's name] can be found in [location]. The schedule describes the time intervals and locations of building and ventilation components that are inspected and maintained on a routine basis. The schedule was established using the past experience of school district maintenance professionals, the availability of financial resources, and technical guides, including the manufacturer's specifications. All records of preventive maintenance are kept attached to the relevant operating system for easy evaluation.

Unless otherwise notes, school buildings should be maintained according to the American Society of Heating, Refrigerating, and Air-Conditioning Engineers' (ASHRAE) recommended comfort parameters. If the recommended parameters cannot be met, the district staff makes ventilation adjustments that provide fresh air, temperature, and humidity levels that are as close to the ASHRAE parameters as possible.

Construction and Renovation

[School district's name] should consider IAQ when planning construction and renovation projects. The IAQ Coordinator, [IAQ Team], superintendent, and school board discuss major structural changes that may impact IAQ. The findings from walkthrough inspections and building systems evaluations should be considered when planning renovations. *IAQ Design Tools for Schools (DTfS)*, a Web-based guide for establishing good IAQ practices into the design, construction, renovation, operation, and maintenance of K-12 school facilities (www.epa.gov/iaq/school design) can be utilized. These plans are summarized in [location].

To the extent possible, major renovations should be performed when school is not in session. If renovation projects must be performed while school is in session, the return air from any area being renovated should be isolated from the main ventilation system. Engineering controls should be used to contain and minimize the distribution of dust and other contaminants produced by construction activities. Cleaning operations should be more frequent during and after renovation.

Microbial Management

Microbials, such as mold, bacteria, and viruses, are a significant cause of illness, health symptoms, and discomfort. School staff should be aware that the easiest way to control microbial growth is to control moisture.

Signs of water intrusion and microbial growth should be investigated during the walkthrough inspections, building system evaluations, and other efforts. The maintenance staff should be informed about damaged buildings systems and components that cause water leaks and water condensation. School staff must make the necessary repairs and adjustments in a prompt manner. Materials damaged by water should be replaced when possible. Damp or wet materials must be dried within 48 hours (preferably within 24 hours).

Materials contaminated with microbials should be promptly cleaned or replaced. Mold growth should be removed from non-porous surfaces with a strong brush and non-ammonia containing detergent and thorough drying. Remediation projects that cannot be handled by district staff should be contracted to a professional. Large-scale remediation projects may require specific control and protection measures. For additional information on mold remediation, refer to EPA's guide, "Mold Remediation in Schools and Commercial Buildings" and EPA's Web site: www.epa.gov/mold.

Staff Education

All district employees play an important role in maintaining and improving air quality since their behavior can affect the quality of the air present in school buildings. For example, placing objects on unit ventilators, adjusting room thermostats, or turning off unit ventilators can worsen the quality of air in a room. An educated employee is more likely to take steps to maintain good air quality. In addition, an employee with an understanding of IAQ is more likely to report IAQ concerns quickly and accurately. For these reasons, the district staff must be educated about IAQ.

[School district's name] performs an annual IAQ training session, as part of the [name of training program, such as health and safety, employee right to know]. The [IAQ Coordinator or another qualified person] performs the training. The training includes [sessions from training agenda: for example, describe the importance of IAQ to health and learning].

The IAQ TFS Backgrounder and checklists (distributed annually) are educational tools. Staff should complete all the checklists. At a minimum, each year the Teacher's, Ventilation, and Building and Grounds Maintenance Checklists should be completed.

Communication

Communication is a critical element to successful IAQ management. The IAQ Coordinator and other district authorities try to limit misinformation and confusion through the use of effective communication. In order to develop and maintain the trust of the community and staff, the IAQ Coordinator and other designated district employees should communicate with relevant parties in a prompt, honest, and courteous manner until the issue is resolved. Every time an IAQ concern is addressed or resolved, the IAQ Coordinator should report the measures taken and the resolution of the identified concern to the appropriate parties.

In the unlikely event of an IAQ emergency, the district will accommodate the needs of students, parents, and staff. One or more contacts shall be selected to handle the media and update the community during a crisis. No one other than the district representative(s) should discuss IAQ-related issues with the press. The media will be alerted by [name of district's media contact] when it is necessary to provide information to a broader audience. Every effort will be made to share appropriate information as soon as it becomes available to the school district.

The IAQ Team and Coordinator will inform parents and staff about:

- The IAQ Management Plan and ongoing efforts, how to view the Plan upon request, and how to obtain an IAQ Concern Reporting Form.
- How to contact the IAQ Coordinator about IAQ issues.
- Where to find self-help information on how to evaluate IAQ in the school and to learn about structural features and operational practices of the school buildings.

[School district's name] provides this information to parents and staff using [name the media used (such as the school newsletter, "Right-to-Know" notification, the school district's Web site, or a letter) and time of year (usually the beginning)].

6. STAFF RESPONSIBILITIES FOR MAINTAINING GOOD IAQ

All staff members are responsible for improving and maintaining good IAQ [*tailor responsibilities to meet your school's needs*]:

- **Teachers** should refrain from interfering with airflow from ventilators (e.g., do not stack books or other items on ventilators, cover vents with posters, or turn off the fan due to noise), remove clutter in their classrooms, properly dispose of hazardous waste, and enforce the school's various IAQ policies in their classrooms.
- **Administrators** should communicate the school's activities to the school board, staff, students, and community. They also need to ensure that the school is implementing IAQ policies appropriately.
- **Facility operators** must ensure that HVAC systems are operating properly and that buildings are maintained adequately and cleaned regularly.
- **Custodians** need to follow all policies regarding cleaning chemicals, ensure that the school is regularly vacuumed and swept, clean drain pans, empty trash cans, and check drain pipes regularly. They should also look for signs of pest problems and inform the appropriate people of any issues.
- **Health Officers/School Nurses** should track illnesses, such as asthma, that may provide an early warning of IAQ problems.
- **The School Board** needs to approve the IAQ Management Plan. This approval shall include the date, a copy of the minutes from the meeting, and how often the Plan must be updated or reapproved (e.g., after every major change to the Plan, or every year, whichever comes first).

7. APPLICABLE LOCAL AND STATE REQUIREMENTS/REGULATIONS

[*School district's name*] will meet the following local and state requirements and regulations related to IAQ: [*List all local and state IAQ requirements and regulations that apply to school buildings. For example:*]

- *Non-smoking laws*
- *Asbestos regulations*

8. EMERGENCY RESPONSE

Emergency Response Policy

An emergency is defined as an unforeseen circumstance that requires immediate action, assistance, or relief. This includes situations that are potentially life threatening, such as:

- Spills of hazardous materials;
- Complaints of severe headaches, nausea, and combustion odors; and
- Diagnosed Legionnaire's disease or tuberculosis.

In addition, emergencies include situations where there is limited time available to prevent serious property damage, such as flooding in a carpeted area or health problems.

It is up to the discretion of the school administrators to identify and react to emergencies on a case-by-case basis, using the above definition as a general guideline only. If doubt exists about whether exposure to a specific hazard constitutes an emergency, a precautionary approach may be used where the matter is handled as an emergency. Non-emergency situations are addressed according to the "Reporting and Response Policy."

District officials must respond to emergencies immediately. If the problem cannot be resolved with in-house resources, external help should be acquired (e.g., local health agency, IAQ professionals). If a hazard poses an immediate health threat to the students and staff, the affected building areas must be evacuated. All avenues of communication need to be utilized to warn and inform affected or interested parties in a prompt manner.

IAQ Reporting and Response Policy

[School district's name] encourages the reporting of IAQ concerns, regardless of how trivial the issue may seem. The prompt reporting and resolution of IAQ issues has the potential to prevent serious problems from developing, which will help to prevent potential health effects, discomfort, and unnecessary costs. This makes the investigation of all reported concerns worthwhile.

The IAQ Coordinator should request concerned staff, students, and parents to report their IAQ concerns in writing. A written description of the concerns reduces misunderstanding and creates a history that can be referred to at a future date. All written concerns should be sent to the IAQ Coordinator to initiate an official IAQ concern reporting process. The resolution of the issue needs to be documented and the affected parties should be informed in writing about the measures taken. Information collected must be processed and stored according to the school district's policies.

9. STEPS FOR PREVENTION

[*School district's name*] is committed to preventing IAQ problems. To reach this goal, the district will complete the following activities:

- Every school must designate an IAQ contact, distribute and collect checklists, and report results to the IAQ Coordinator.
- The IAQ Coordinator should ensure that all IAQ efforts are coordinated and completed in a timely manner.
- All IAQ policies and programs (for radon, IPM, anti-idling, non-smoking, etc.) must be in place by [date].
- The school board, community, staff, unions, and students need to be updated on the district's IAQ efforts and carry out their responsibilities for maintaining good IAQ.
- Every school must complete an annual review to make changes to the IAQ Management Plan. The annual review is necessary because changes may occur in the building systems, components, occupants, and the administration's attitudes and priorities. The annual review involves:
 - Building systems evaluations;
 - Walkthrough inspections;
 - Reviewing IAQ concerns and other information;
 - Discussing new issues with the IAQ Team; and
 - Updating the IAQ Management Plan as needed.

A brief description of the changes to the Plan should be summarized and included in all future versions of the Plan. This documentation should reduce the likelihood of repeating policies and procedures that were ineffective or inefficient and ensure the success of the IAQ program.